

329329_ST25.txt
SEQUENCE LISTING

<110> Immunomedics, Inc.
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Losman, Michele J.
Hansen, Hans

<120> HUMANIZATION OF AN ANTI-CARCINOEMBRYONIC ANTIGEN ANTI-IDIOTYPE
ANTIBODY AS A TUMOR VACCINE AND FOR TARGETING APPLICATIONS

<130> 329329

<140> 10/808,538
<141> 2004-03-25

<150> US 09/155,106
<151> 1998-11-17

<150> PCT/US97/04696
<151> 1997-03-19

<150> US 60/013,708
<151> 1996-03-20

<160> 45

<170> PatentIn version 3.4

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20 25 30
Xaa Xaa Xaa Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60

Xaa Xaa Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Phe Cys
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Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp
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Ser Leu Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Asn Tyr
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35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ser Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

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<223> KOLWI2VH-1 Sequence

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 20 25 30

Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
 65 70 75 80

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Tyr Cys
 85 90 95

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Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
 50 55 60

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Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Tyr Cys
85 90 95

Ser Arg Asp Asp Tyr Gly Gly Gln Ser Thr Tyr Val Met Asp Ala Trp
100 105 110

Gly Gln Gly Thr Pro Val Thr Val Ser Ser
115 120

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35 40 45

Tyr Xaa Xaa Xaa Xaa Xaa Xaa Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
85 90 95

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
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Leu Arg Trp Phe Gln Gln Lys Pro Gly Lys Ser Pro Arg Leu Leu Ile
35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Arg Ser Gly Ser Asp Phe Ser Leu Thr Ile Asn Ser Leu Glu Ser
65 70 75 80

Glu Asp Met Ala Ile Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
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Thr Phe Gly Ile Gly Thr Lys Leu Glu Arg Lys Arg
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
20 25 30

Leu Arg Trp Phe Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

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Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Arg Ser Gly Ser Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
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Glu Asp Ile Ala Thr Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
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Leu Arg Trp Phe Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
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Glu Asp Ile Ala Thr Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
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Thr Phe Gly Ile Gly Thr Lys Leu Gln Ile Lys Arg
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ctgcaaatgg acagtctgag gcctgaggac acgggcgttt attactgttc aagagatgac      300
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      20          25          30

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Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
      35          40          45

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Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
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Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
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Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Tyr Cys
      85          90          95

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Gly Gln Gly Thr Pro Val Thr Val Ser Ser
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gggaaagctc cgaactttt gatttatggt gcaaccaact tggctgcagg ggtcccatca 180
cggttcagtg gcagtgggct tgggacagat ttactttta ccatctcaag ccttcagcct 240
gaagatattg ctacttatta ctgtctgcac cattctgagt atccatacag gtttgaatt 300
gggaccaagt tgcagatcaa acgtg 325

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
20 25 30

Leu Arg Trp Phe Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
85 90 95

Thr Phe Gly Ile Gly Thr Lys Leu Gln Ile Lys Arg
100 105

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 gggaaatctc cgaggctttt gatttatggt gcaaccaact tggcagctgg ggtcccatca 180
 cggttcagtc gcagtaggtc tgggtcagat ttttctctga ccatcaacag cctggagctc 240
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 gggaccaagc tggaacggaa acgg 324

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 20 25 30

Leu Arg Trp Phe Gln Gln Lys Pro Gly Lys Ser Pro Arg Leu Leu Ile
 35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Arg
 50 55 60

Ser Arg Ser Gly Ser Asp Phe Ser Leu Thr Ile Asn Ser Leu Glu Ser
 65 70 75 80

Glu Asp Met Ala Ile Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
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Thr Phe Gly Ile Gly Thr Lys Leu Glu Arg Lys Arg
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 tcctca 366

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Ser Leu Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Asn Tyr
 20 25 30

Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
 35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ser Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Thr Tyr Tyr Cys
 85 90 95

Ser Arg Asp Asp Tyr Gly Gly Gln Ser Thr Tyr Val Met Asp Ala Trp
 100 105 110

Gly Gln Gly Ser Ser Val Thr Val Ser Ser
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cactacacct 130

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acgcagaca      129

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36

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ctgaaccg 128

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